age 3, line 6, change

Page 3, line 6, change "in one go" to --at once--.

Page 5, line 15, insert:

--SUMMARY OF THE INVENTION--

Page 9, before line 7, insert:

--BRIEF DESCRIPTION OF THE DRAWINGS--.

after line 22, insert:

-- DETAILED DESCRIPTION OF THE INVENTION--.

Page 10, line 27, change "in one go" to --at once--.

Page 16, line 23, change "Whilst" to --While--.

IN THE CLAIMS:

Please amend the claims as follows:

1. (Amended) A lithographic projection apparatus comprising:

an illumination system for supplying a projection beam of radiation;

a first object table for holding [patterning means] a projection beam patterning structure capable of patterning the projection beam according to a desired pattern;

a second object table for holding a substrate having a surface to be exposed, such that, when held on the table, the said surface lies in a reference plane;

a projection system [for imaging] which images the patterned beam onto a target portion of the substrate; and

a positioning system [for moving] which moves said second object table between an exposure position, at which said projection system can image said patterned beam onto said substrate, and a measurement position; [characterized by:]



a calibration system [for measuring] to measure lateral displacements of a reference point in a plane of said second object table as a function of tilt, at said measurement position, wherein said calibration system comprises:

a diffraction grating mounted to said second object table;

[illuminating means for generating] an illuminator which generates a measurement beam of radiation and [directing] directs it to be incident on said diffraction grating so as to be diffracted thereby; and

a detector [for detecting] which detects the position of said diffraction grating.

- 2. (Amended) Apparatus according to claim 1 wherein said diffraction grating is an at least partially transmissive diffraction grating and said calibration system <u>further</u> comprises a light guide [for directing] <u>which directs</u> said measurement beam to be incident on said diffraction grating in a direction substantially independent of the tilt of said second object table.
- 3. (Amended) Apparatus according to claim 1[or 2], wherein said calibration system is constructed and arranged [for measuring] to measure displacements of a reference point in said reference plane and said diffraction grating is mounted substantially parallel to said reference plane on said second object table.
- 4. (Amended) Apparatus according to claim 2[or 3], wherein said illuminating means is arranged to emit said measurement beam along an incident path substantially perpendicular to and spaced from said diffraction grating, and said light guide comprises a plurality of reflectors mounted to said second object table behind said diffraction grating relative to said [illuminating means] illuminator and positioned to reflect said measurement

beam onto a return path parallel to said incident path and passing through said diffraction grating in a direction opposite to said incident path.

- 6. (Amended) Apparatus according to claim 1, [2 or 3,] wherein said [illuminating means] illuminator is arranged to emit said measurement beam along an incident path substantially perpendicular to said diffraction grating and passing therethrough, and said light guide comprises a retro-reflector mounted to said second object table behind said diffraction grating relative to said [illuminating means for reflecting] illuminator to reflect said measurement beam along a return path substantially parallel to said incident path and passing back through said diffraction grating.
- 9. (Amended) Apparatus according to claim 7[or 8], wherein said planereflector is sized and positioned so as to reflect substantially only the zeroth diffraction order of the measurement beam diffracted by its first passage through said diffraction grating.
- 12. (Amended) Apparatus according to [any one of claims] <u>claim</u> 6 [to 11] further comprising an anti-reflection coating on at least one surface of said diffraction grating.
- 13. (Amended) Apparatus according to [any one of the preceding claims] <u>claim 1</u> comprising a plurality of calibration systems for measuring displacements of said second object table with tilt about a plurality of axes.
- 14. (Amended) A method of calibrating a lithographic projection apparatus comprising:

[an illumination system for supplying a projection beam of radiation;

a first object table for holding patterning means capable of patterning the projection beam according to a desired pattern;

a second object table for holding a substrate having a surface to be exposed, such that, when held on the table, the said surface lies in a reference plane;

a projection system for imaging the patterned beam onto a target portion of the substrate; and

a positioning system for moving said second object table between an exposure position, at which said projection system can image said patterned beam onto said substrate, and a measurement position, said positioning system including electronic control means having parameters defining a rotation-invariant point of the second object table; the method comprising the steps of:]

measuring [the] <u>a</u> position of a reference point on [the] <u>a</u> surface of [the second] <u>an</u> object table <u>for holding a substrate having a surface to be exposed</u> at different tilts;

calculating [the] <u>a</u> distance between the surface of the [second] object table and a rotation-invariant point of the [second] object table; <u>and</u>

adjusting parameters of [said] an electronic controller [control means] included in [said] a positioning system for moving said object table between an exposure position and a measurement position so that said rotation-invariant point is at a predetermined vertical distance from the reference point [surface] of the [second] object table.

15. (Amended) A method of manufacturing a device using a lithographic projection apparatus comprising:

[an illumination system for supplying a projection beam of radiation;

a first object table for holding patterning means capable of patterning the projection beam according to a desired pattern;

a second object table for holding a substrate having a surface to be exposed, such that, when held on the table, the said surface lies in a reference plane;

a projection system for imaging the patterned beam onto a target portion of the substrate; the method comprising the steps of:]

providing a substrate provided with a radiation-sensitive layer and having target portions thereof to [said second] an object table;

providing a projection beam of radiation using [the] <u>an</u> illumination system;
using [said patterning means] <u>a projection beam patterning structure</u> to endow the
projection beam with a pattern in its cross section; [and]

moving the [second] object table to an exposure position[, and];
projecting the patterned beam of radiation onto said target portions of the substrate;

<u>and</u>

[characterized by the step of:]

detecting displacements of a reference point of said second object table at various angles of tilt when situated at said measurement position.

16. (Amended) A device manufactured according to the method of claim 15 [16].